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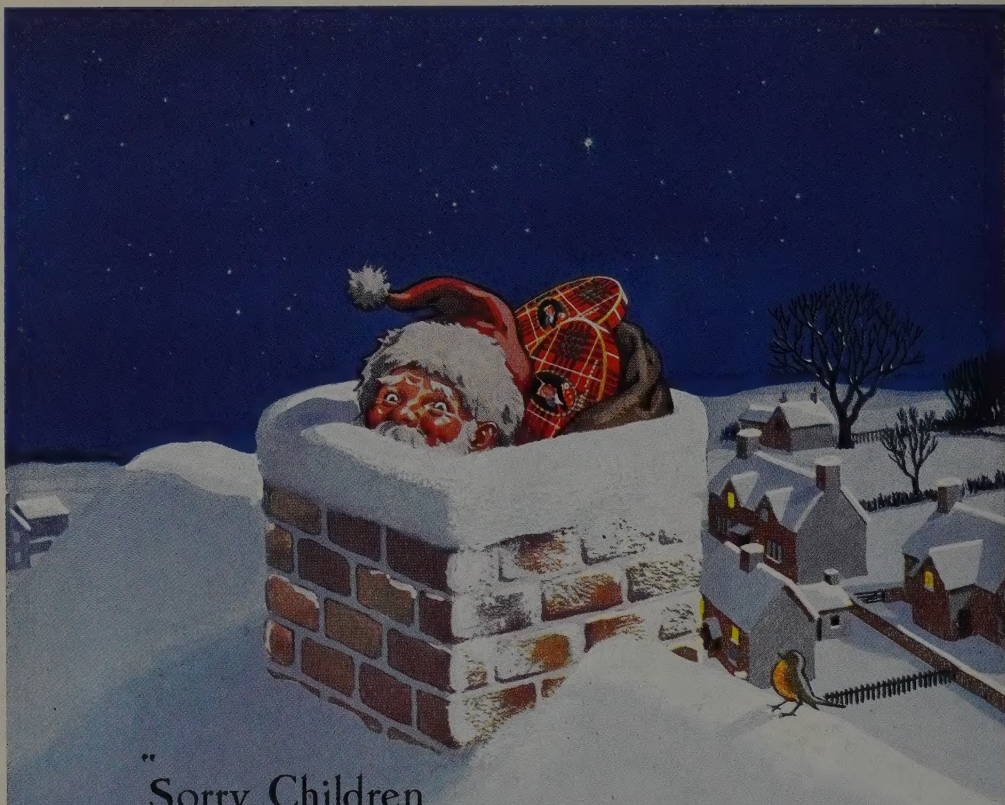
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# A Visit to the Lost Tribe

by HEDDA MORRISON

ABOUT one hundred miles to the west of Peking, in the mountainous country generally known to foreigners as the Western Hills, there exists a small area inhabited by a group of people with the romantic name of the Lost Tribe. The name is not one given to people who differ in looks or any other physical peculiarity from normal Chinese, but it is a name given by the Chinese authorities and dates back to the very early days of the Manchu dynasty.

In April 1649, the adventurer and soldier Li Tzu Ch'eng captured Peking, the capital of the Ming Emperor Ch'ung Chen. The Ming Empire had degenerated into an inefficient state ruled by eunuchs and venal officials. With the aid of a treacherous eunuch who opened the city gates, Li had little difficulty in taking the city. The emperor committed suicide after killing all the members of his family, and Li massacred all those who he thought might be loyal to the memory of their late emperor. Among others, he executed the family of Wu San Kuei, a faithful retainer of the emperor, who was at that time in command of an army at Shan-haikuan which was opposing the aggressive and hostile Manchu people. When he heard of the massacre of his family, and to revenge himself on the perfidious Li, Wu threw in his lot with the Manchus who, with his aid, retook Peking eighteen days after Li had established himself on the throne.

Some 300 men of Li Tzu Ch'eng's army fled into the Western Hills. After a while they returned to Peking to make their submission before the new emperor and to beg his forgiveness. The latter was granted, but only on the condition that they should withdraw, with their families, to the Western Hills and never move without special permission of the government. They had to live in a poor and barren locality and pay heavy taxes which were entered under those of a near-by town. They were too poor ever to be able to make any complaint at court against their treatment. They were deserted and forgotten and in a very short time became, in fact as well as in name, a Lost Tribe. When the Chinese revolution took place in 1911, they numbered about 4000 souls. To this day they have retained old fashions and customs which have died out or are only rarely to be found in other parts of China. Though they live only a few days' march west of Peking, they still

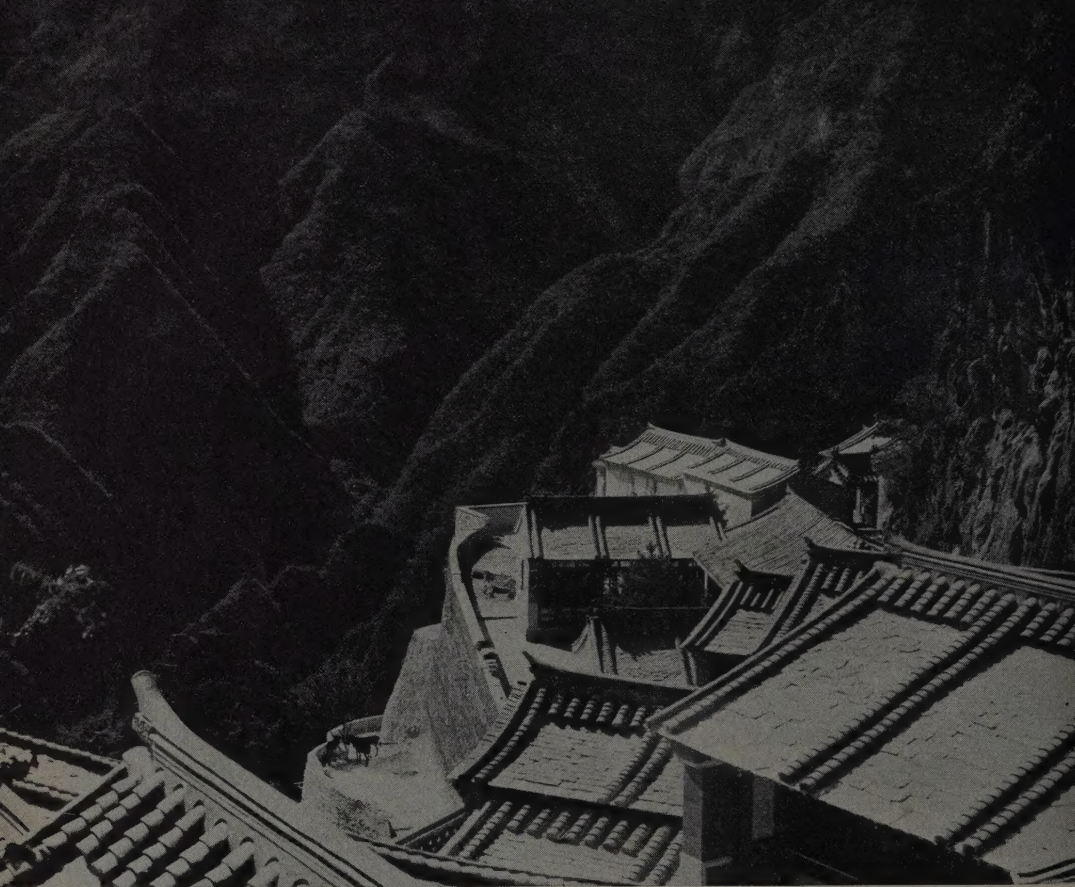
speak their original Shantung dialect. In the whole of the district which they inhabit there is nothing which shows the slightest Western influence.

A year before the outbreak of the Sino-Japanese war, in July 1936, I paid a visit to the Lost Tribe country. Its main attraction lay in the fact that it was little known and rather inaccessible. Although the actual area is small, approximately seventeen miles long and thirteen miles wide, it is necessary to cross a mountain pass 6000 feet high *en route*. There are no roads, only tracks and bridle paths which have to be traversed on foot or by donkey. Only a few villages are to be found in these bleak and barren hills and accommodation, even of the simplest kind, is often difficult to find. A route exists from the south, up the valley of the Chu Ma Ho, a fast-flowing mountain torrent which must continually be crossed. The border line to the west is formed by the Great Wall of China, which opens into the Lost Tribe country at the Ta Lung Men, or Great Dragon Gate. To the north and east are high hills. Apart from the people, I was particularly interested as a photographer in the landscapes which were said to be very fine. With the outbreak of the Sino-Japanese war in 1937 the area became almost entirely isolated and a strong-



*Village folk in the barrier hills leading to the Lost Tribe country pray to the God of Rain, whose failures keep the district impoverished*





photographs by the author

*Sheng Mi Chi T'ang, a Buddhist temple built on a spur of the White Flower Mountain in the region approaching the Lost Tribe country; as in all such temples, travellers are hospitably entertained*

hold of the Communist 8th Route Army. It is quite possible that the area has not since been visited by Europeans.

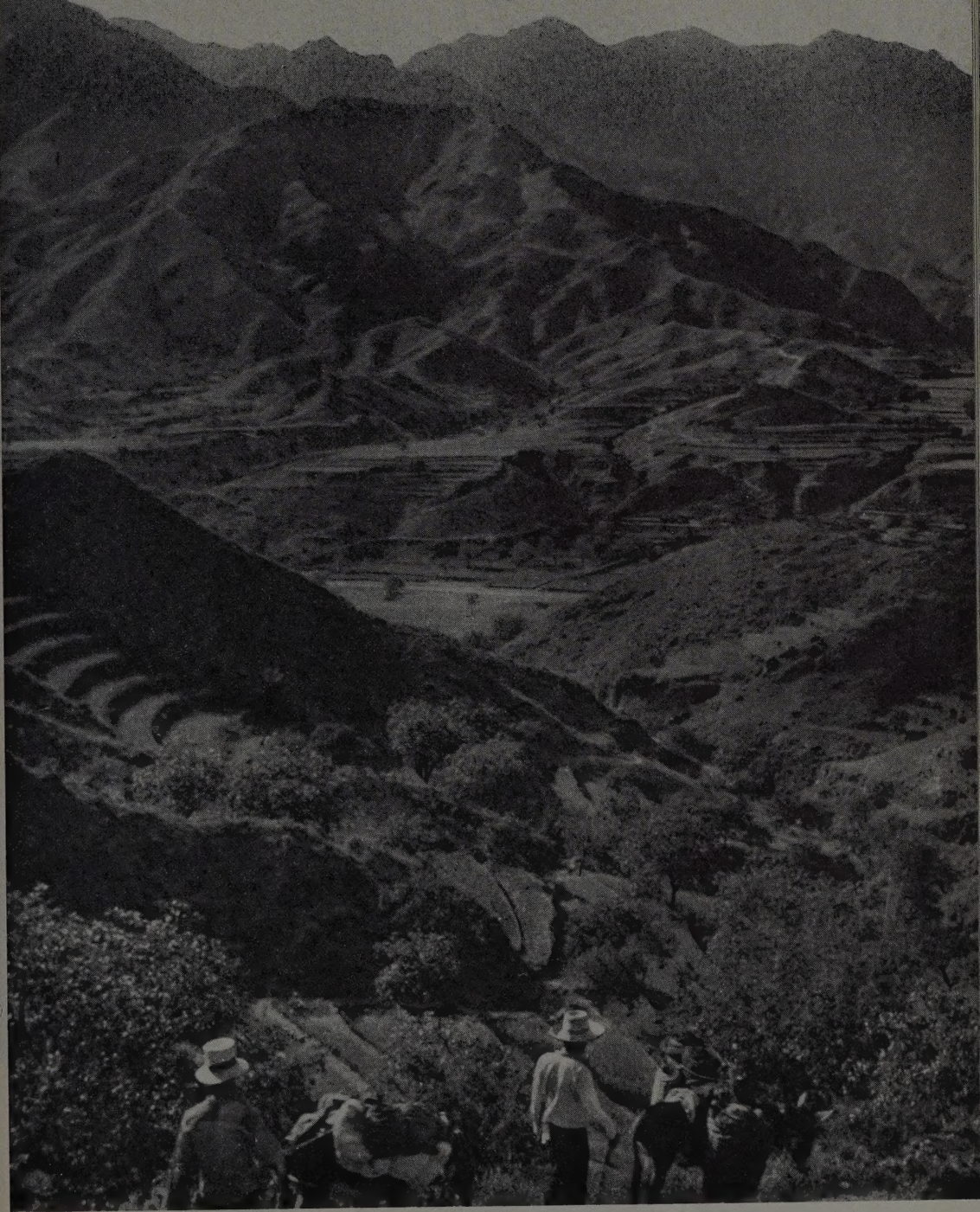
I bought a supply of food and a camp bed in Peking and hired three donkey drivers together with their animals. I told them to meet me at a station called Chang Hsin Tien, beyond the Marco Polo Bridge on the Peking-Hankow railway. When I set off from Peking, I was not quite certain if they really would be there. However, I need have had no qualms. They duly met me, loaded my luggage on the donkeys and we set off. For the first four hours we crossed the flat, rolling North China plain. It was extremely hot. We stopped at each little village we passed to refill my thermos bottle with hot boiled water, the only safe drink in the country districts of China.

Finally we entered a dry river-bed leading

up into the hills. Above us rose terraces of land, painstakingly cut out of the hillsides by the land-hungry Chinese. Once we approached a place where stone was being quarried. As soon as we appeared the workmen all came rushing down the slope to where we stood. The various gloomy warnings which I had been given against making the journey flashed through my mind, but our interceptors were moved only by curiosity. We had to answer questions as to who we were and where we were going and there was a lively discussion on the subject of our plans and equipment. Finally, after many expressions of mutual esteem, we continued on our way. Thereafter, every village we came to, by that strange system of communication which is such a mystery to the foreigner, expected us and knew all about us.

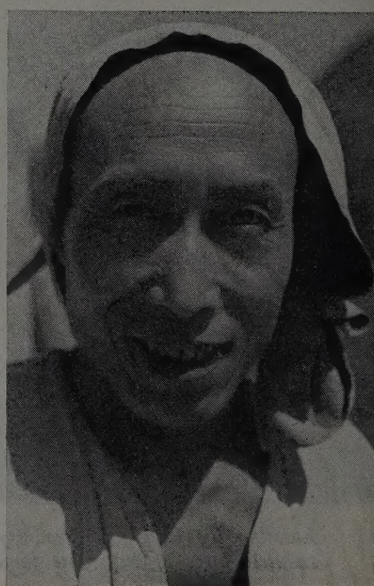
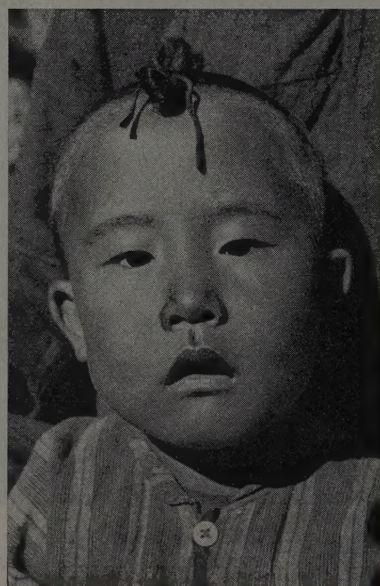
For two days we ascended the same river-



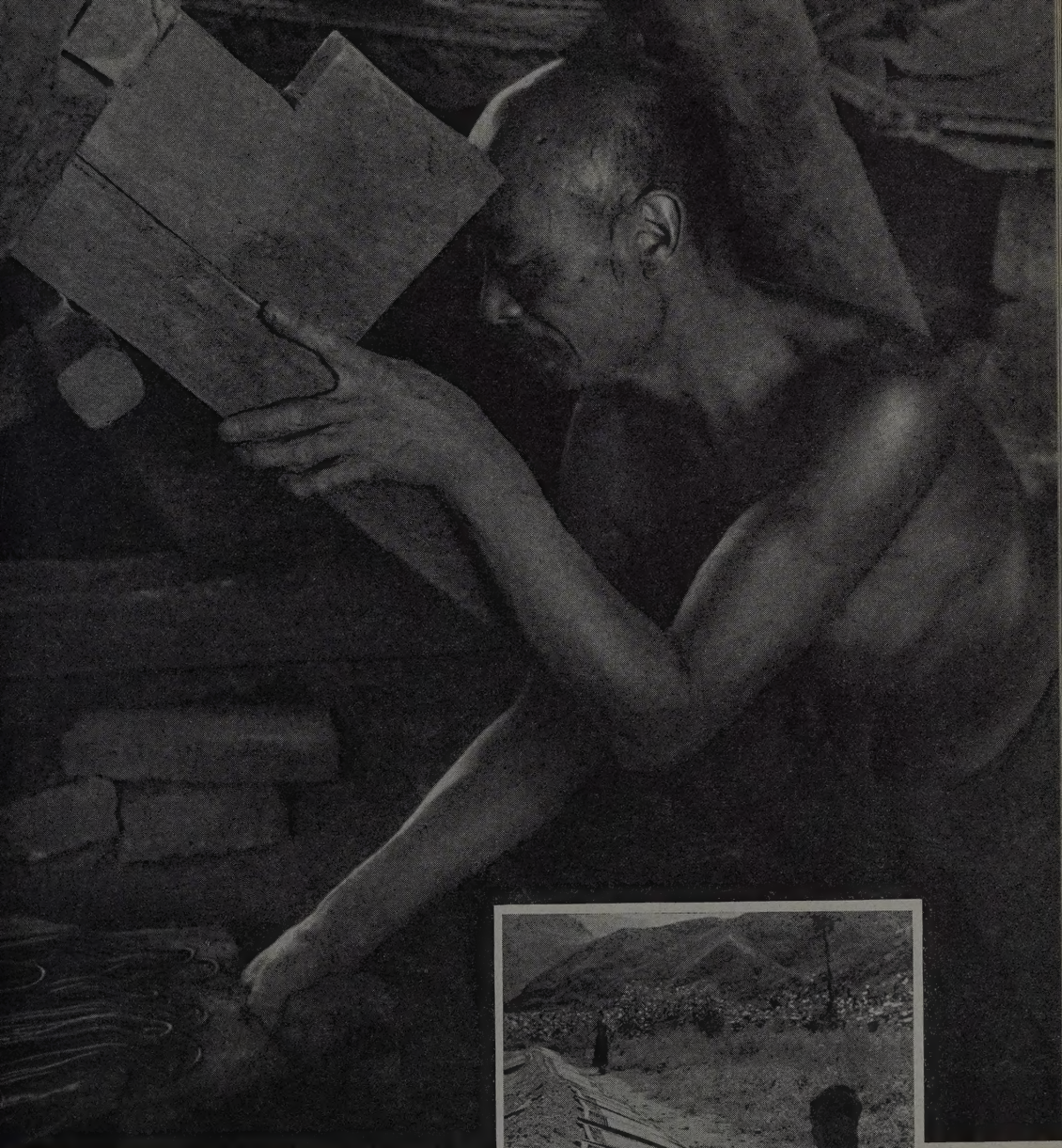


*Entering the Lost Tribe country, a district which is a stony, infertile waste, but where even on the smallest piece of cultivable land the people grow millet, sweet potatoes, walnuts and bitter apricots*









(Opposite) *Ta Tsun*, largest village in the *Lost Tribe* country, with some of its inhabitants, obliging, friendly people who are inordinately curious about strangers. Their main industry is the making of incense sticks. Pulp formed from chips of the root wood of fruit trees is forced through a narrow aperture (above) by a worker, who presses down the compressor bar while catching on a platter the soft cord which emerges; this is subsequently (right) straightened and dried on racks in the sun





bed, climbing slowly upwards. By day we met few people and at night we slept in various temples. On the third day we reached the foot of the highest mountain in that region, Pai Hua Shan, the White Flower Mountain, which rises to a height of more than 6000 feet. It was a charming place. In contrast to the barren surrounding hills, it supported vegetation among which grew every imaginable kind of flower. Our way led over a spur of this mountain and we started to cross it in a sultry heat which seemed to betoken a storm. For weeks there had been no rain and we had seen how in the little villages the people prayed to the God of Rain, carrying his effigy in procession with a great display of fire-crackers. The people were certain that their prayers would be answered and their supposition proved all too correct.

We had only ascended a little way when a steady downpour set in. Soon the narrow path became a slippery morass in which we, as well as the donkeys, floundered hopelessly. Late in the evening we arrived at the top of the pass, soaking wet, but in good spirits. The donkeys' packs containing our luggage were covered with oil-cloths, and one of the donkey-drivers had decorated them with flowers. We called him the flower doctor. The descent took three hours and it was not until ten o'clock that we found a little village to give us shelter. We had some difficulty in waking the people, but once they understood what we wanted, they were very kind and helpful.

I have always found the Chinese country people, even in the most remote districts, to be friendly and obliging. The foreign traveller must, however, get used to their inordinate curiosity about himself and everything to do with his affairs. It is a national characteristic which can be extremely exasperating to the European, although no rudeness is intended. It merely springs from an entirely different conception of good manners. In Europe it is considered polite not to ask personal questions of chance acquaintances; in China it is exactly the reverse. In polite conversation one must always ask where the other person has come from, his age, the age of his father and mother, how many children he has and when he last had a meal. As a result of this national trait, a frank and open curiosity on the part of the country people must be expected. As long as it is realized that no bad manners are intended, travel is extremely easy. In the case of the little village we had come to, the inmates of the house we stopped at gave up their one room to me and moved into the stables for the night. The room fortunately contained a *k'ang*, a clay

platform with a stove built into it, for which, in my wet condition, I was extremely grateful.

When we left the next afternoon the weather was sunny and cloudless. After a few hours' walk we came to the first village of the Lost Tribe. We spent the next ten days in various small villages of the district, which is a stony, infertile waste, situated at an average height of 3000 feet above sea level. It is very easy to see whether a locality is a poor one in China by the number of temples to be found in the neighbourhood. Here the people were so poverty-stricken that no temples existed at all, and only a few altars in some of the larger houses. Even the smallest piece of cultivable land is brought under cultivation. Millet, sweet potatoes, walnuts and a kind of sour and bitter apricot are grown. The latter is perhaps the most important crop, for the fruit is dried to make a preserved vegetable, an oil is extracted from the stones, and incense is made from the fragrant, aromatic wood. The manufacture of incense sticks is the most important industry of the area. Men may often be seen carrying bundles of them into Peking for sale.

As usual the people were extremely inquisitive. Many of them had never seen a foreigner before, much less a foreign woman. Since my visit would undoubtedly form the staple topic of conversation for a considerable period of time, no opportunity was lost to pry into my habits and behaviour. I had to hang oil-cloths over the windows, for the villagers lost no time in tearing holes in the paper windows to see me better. The women were particularly curious. One day a deputation of two Chinese ladies called to see me. After a long talk and when they had thoroughly examined all my belongings we parted on the best of terms. Evidently their report to the village community was of a satisfactory nature and subsequently I was left more to myself.

The women of the Lost Tribe are very old-fashioned and they still retain customs which are no longer to be found in other parts of China. A good example of this was to be seen in the way they did their hair, which I found upon my return to Peking to have been the mode that was in vogue during the Ming dynasty. The popular name is the teapot-handle coiffure, from the peculiar handle-like braid worn at the back of the head. It is very intricate and principally consists of binding the hair in place with string, without the use of any hairpins.

The backward nature of the population led them to start binding the feet of their women only in 1911, when throughout most of China the custom started to go out of fashion.





(Left) One of the belles of the Lost Tribe. Her broad expanse of forehead, the object of much admiration, has been created by an intricate and painful process involving the careful plucking out of each hair by the root. Her earring is handmade of iron

(Right) The teapot-handle coiffure. There are several variations, the simpler ones being straightforward loops; even for the most complicated no pins are required, the hair being bound securely in place with brightly coloured red and green string







*A Lost Tribe woman embroidering a child's apron. Her feet are bandaged, giving them the appearance of having been bound without the attendant disadvantages of malformation*

Actually they do not bind the feet of the girls in early childhood as did all other Chinese, but they have a method of bandaging the adults' feet which does not malform them but gives them the appearance of being bound. The women have the same stumpy walk, although their feet are quite normal. Their only ornaments are large earrings and finger rings, which are made either of silver or of iron. Their dresses are very simple and nearly always of cotton. It is rare to see a silk garment in the region. Owing to the poverty of the entire area, there is little work to be done in the poor and simple houses. By an extraordinary and freakish reversal of custom, the cooking is done by the men. As a result the women have little to do except to breed children, to make shoes, to do a little embroidery and appliqué work and, most

important of all, to gossip.

One of my difficulties was to persuade the people to allow me to photograph them. Many had never seen a foreigner before and were at first inclined to view the camera with suspicion, supposing it to contain some kind of strange foreign devil. I overcame their suspicions by allowing them to look into the focussing screen of my Rolleiflex camera to see what I was doing. This caused tremendous interest, and finally the people became so anxious to help me that they were often more of an embarrassment than an aid.

When the appointed time for my departure came I was really sorry to leave, for the unspoilt nature of the people had greatly endeared them to me. By contrast, life in the foreign community of Peking was not greatly alluring. The two communities, however, had at least one notable characteristic in common, the fact that gossip was altogether indispensable for social intercourse.

We returned down the valley of the Chu Ma Ho, but now the rains had set in and the river was a raging torrent. By ill fortune the track often crossed the stream. Conditions finally became so bad, after a severe thunderstorm, that I had to swim across, holding my camera above my head. All the luggage, except for specially sealed boxes, became wet through. We spent three days in a tiny ham-

let and then were only able to cross when all the tallest men of the village formed a living bridge and passed our luggage over from hand to hand. The donkeys and I had once again to swim.

To avoid the difficulties of continually crossing the river we struck across the mountains and for three days travelled through very wild and lonely country where we met practically no living soul. There were no villages and the nights were spent under the open sky. Finally the plain was reached. I returned to Peking by train with the chief donkey-driver, while the others returned on foot with the donkeys. Travelling third class on the train we were the principal centre of interest and the donkey man, talkative and happy, told all the other passengers about our adventures.





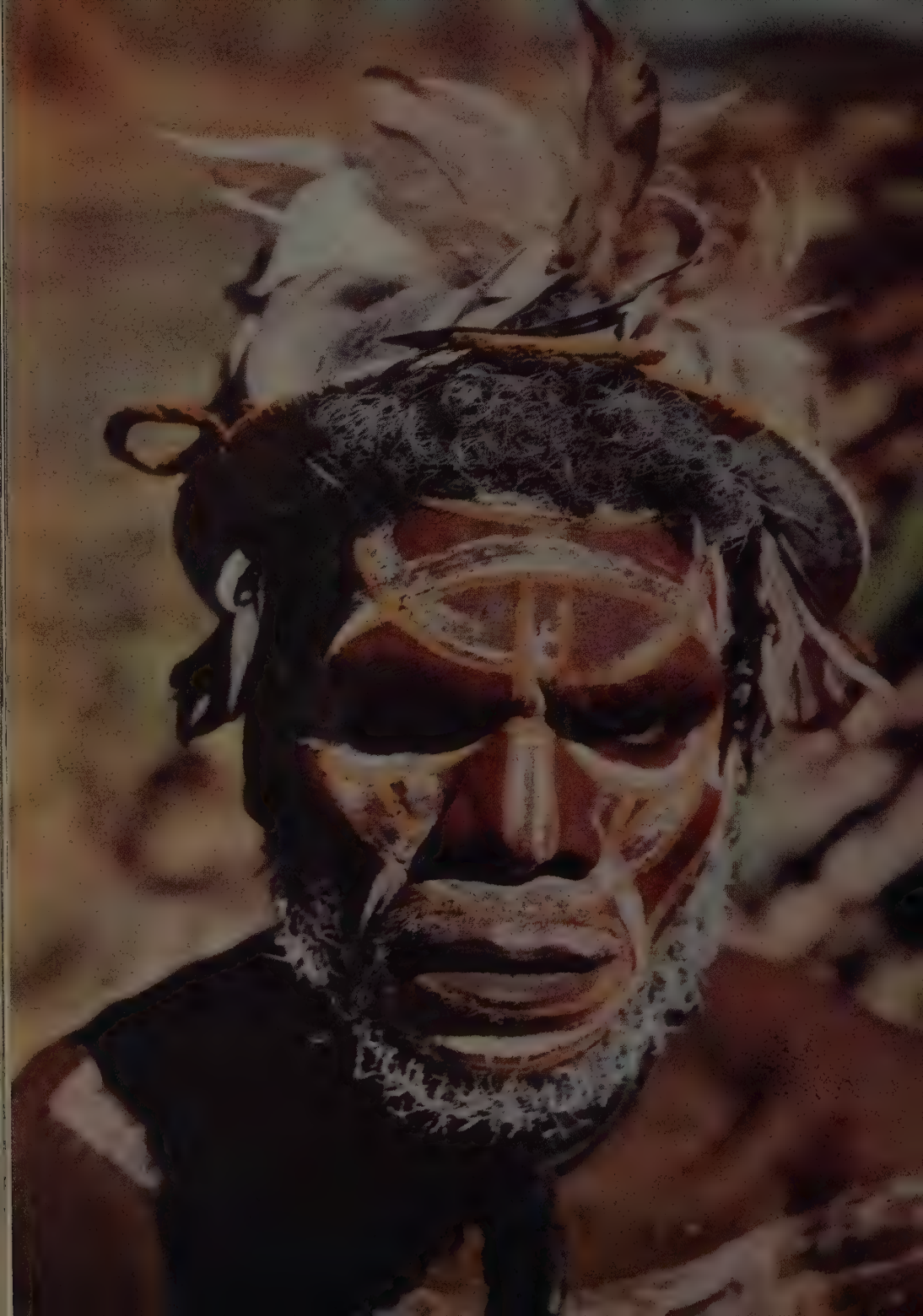
# Snake Bay Corroboree

Notes and Photographs  
by S. F. B. SYDNEY

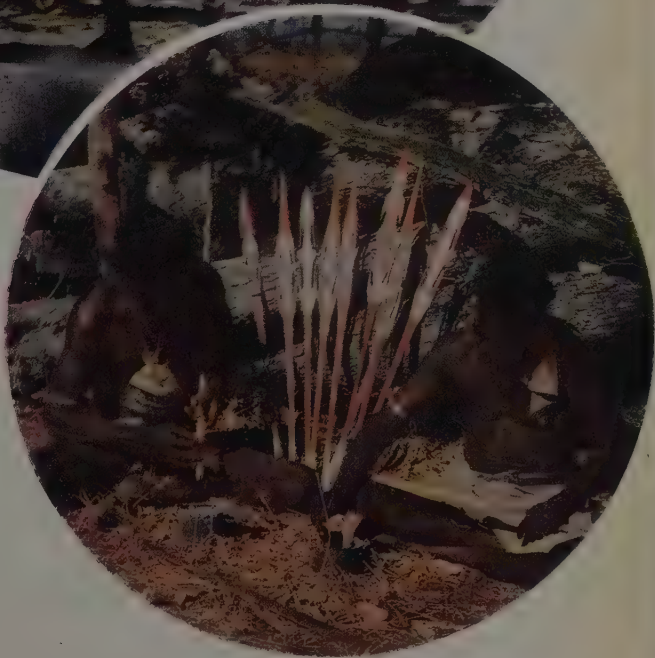
*Experiments designed to improve the welfare of Australia's 70,000 aborigines are being carried out on Melville Island, off the Northern Territory coast, which has been made a reservation by the government. At Snake Bay (above) some of the island's 500 inhabitants, formerly nomadic, are now housed in huts designed for easy building from local materials. (Right) Aboriginal father and son have smeared themselves with red ochre in preparation for a corroboree*











*Melville Island reservation represents the first step in an attempt to give Australia's aborigines a recognized status in their own country. At Snake Bay a community has been established where modern farming methods are taught. But ancient ceremonies are also encouraged, for self-respect can be promoted among neglected people through pride in tribal customs. (Opposite) An aboriginal who has painted himself with significant patterns for his daughter's funeral corroboree, one of many traditional dance celebrations accompanied by music with monotonous melodies and rhythms. It is seen above in progress. (Right) Aborigines painting ceremonial spears carved into intricate patterns*





# 'Fall' Colouring in Vermont

Notes and Photographs by F. S. SMYTHE

Vermont, U.S.A., one of the New England States, is a land of forest-clad mountains and wide spacious valleys, cultivated by a home-loving people very similar in manners, habits and temperament to the rural population of England. It is a country of luxuriant vegetation watered by clear-running streams fed by an abundant snowfall and rainfall, with trim villages and farmsteads set in verdant meadows, copses and arable land at the base of rolling pine-crowned hills. Although the valleys average about 1000 feet above the sea and the hills seldom exceed 4000 feet, the variety of vegetation is considerable. Low down, such fruit-bearing trees, shrubs and plants as cherries, plums, grape vines, blackberries, raspberries and strawberries are cultivated; while forest trees include the famous sugar-maple, oak, ash, elm, hickory, willow, basswood and butternut. On the hillsides beech and birch mingle with white pine and hemlock, and, higher still, the mountains are ever green with spruce and fir. Vermont's loveliest season is the 'fall', when the foliage of its forests varies from a ruby red through every combination of brown and green to russet, yellow and gold. Add to this a stainless blue sky, a warm sun and a limpid atmosphere and the scene is beautiful beyond description. To what are the brilliant colours due? Partly to the wide variety of hardwoods on rather arid soil and partly to two or three weeks of warm Indian summer, following a mild frost early in October, which develop, as on a film, the delicate pigments previously hidden from view in the greens of summer. Lack of rain and nitrogen in the soil also stimulates the development of these pigments. On the rich wet soils of England trees carry their leaves until the frosts kill the coppers, yellows and golds by which nature seeks to diversify and glorify her works





*This wide-spreading oak tree overhangs a by-road near Brandon, Vermont. From here to the dark, conifer-clad summits of the Green Mountains autumn has transformed the landscape with a lavish display of glowing colours*





*It would be difficult to imagine any scene more stimulating than this one near Rutland, Vermont, with its striking contrasts of blue sky and darker water, reflecting a brilliant variety of golden colour. In the foreground is a maple, while the white trunks of silver birches are seen on the far shore among other maples*





*A staggering, but far from exceptional instance of colour in a sugar-maple; at Pittsford, Vermont. The sugar extracted from the sap of North American sugar-maples reaches about 50,000,000 pounds a year; yet, strangely enough, those species which turn scarlet in the fall owe their blazing beauty to a bitter acid in the leaves*





(Above) *One of Vermont's finest scenes: a blue lake set amidst the gold and purple of maples, with a maple-clad slope above it. Beyond are enchanting glimpses between the trees towards the distant ridges of the Green Mountains.* (Below) *In the valley a wild-rose bush, laden with scarlet hips, provides a vivid splash of colour*





# Negroes and Nilotics

by MICHAEL LANGLEY

*The Provinces of Equatoria and Upper Nile in the Southern Sudan lie in one of the most remote regions of Africa. The future of this area is a matter of controversy, being bound up with that of the Anglo-Egyptian Sudan as a whole; but it is so isolated from world trade routes that no schemes for the betterment of the tribes can hope to succeed unless they are based, like those already initiated by British administrators and described by the author, on development from within*

ONE day this summer on the banks of the Jur River near Wau in the equatorial Sudan I watched a Dinka rainmaker sacrifice a calf while two or three hundred members of the tribe danced, supple and suppliant, beneath a clear blue sky. Weather-wise and wizened, the old boy had chosen his day well, for it was raining cats and dogs by lunch-time. These pagan peoples may shock us slightly; they may stir in us a sense of superiority; they may, as they do with me, carry us back to the days when communal society was just beginning on earth. And there is a surprising number of them.

The Negroes and Nilotics of the Southern Sudan have never been accurately counted up, but they are estimated at two and a half million. They are scattered over the Provinces of Equatoria and the Upper Nile, an area of about 260,000 square miles. Dinka, Nuer, Baro, Latuka, Topotha, Didinga, Acholi, Kuku, Kaliko, Azande, Baka, Moru, to mention a few of the tribes. Most of them are at a stage when they express greater wonder at a doll which opens and shuts its eyes than at the possible uses of uranium, found in great quantities across the border in the Belgian Congo. The doll is a product of the white man's magic which you can take hold of. The other requires a grasp of things quite outside the experience of the central African. It is this absolute isolation from Western education, training and technique which has deprived the people of these parts of advantages which are now within easy reach of all who live around the African littoral.

Isolation is the key factor to understanding the tribes of the Southern Sudan. Since the dawn of civilization they have been living by hoe and bow in the centre of a great land mass, while others, more fortunately placed, have been looking to new horizons. Trade routes never reached them. An impenetrable tangle of floating vegetation known as 'sudd' blocked the White Nile south of Malakal and made the use of this waterway impossible

until the turn of the last century. Even today the transport of merchandise by wood-burning paddle-steamers to the railhead at Kosti and thence to Port Sudan takes two or three weeks. This pushes up the price of consumer goods, so that the native coming into Juba, capital of the province, cannot afford to buy anything except the very simplest articles: a piece of cloth, a few beads or trinkets and something from among the cheap ironmongery on the back shelves of the local merchant's shop.

How can this be remedied? How can the standard of living and the productive capacity of a *macedoine* of tribes, whose primitive methods of agriculture often expose them to famine, be improved? The first need is for peace and security. That has been largely established: no small achievement when it is recalled that, until the present administration took firm hold, inter-tribal fights were frequent, usually about grazing rights. When I was in Torit there was a case before the court of a man who had killed five persons. He had himself been killed, and now the brother of the murderer was suing his sub-chief for ignoring a complaint about land tenure, which had been the cause of the trouble. Incidents of this kind are internal. They are dealt with whenever possible by the tribal courts—and there are two hundred of these in Equatoria. The once 'perilous South' is today safe, certainly much safer to travel than are our own roads. You can drive all day over a hard ironstone surface without a thought of anything coming in the opposite direction. Cars are rare and, owing to the presence of tsetse fly, there is no native transport, not even a mule or donkey. The tribesman goes on foot, carrying across the shoulder his bow and spear. There was one conviction for slavery in the Equatoria police report for 1946. He is not thinking of that, but of the wild animals—the lion, leopard, buffalo—and occasional rhinoceros which burst upon him.

In remote and backward countries, taken





(Above) 'The Road to Equatoria.' The White Nile is the only heavy transport route between the Northern Sudan and the South. Wood-burning paddle-steamers carry passengers and cargo from Kosti via Malakal to Juba, nearly 2000 cubic metres of wood being necessary for the twelve-day 750-mile upstream journey. (Below) The arrival of a steamer is watched with interest by some Dinkas of Simsim on the upper reaches of the White Nile.







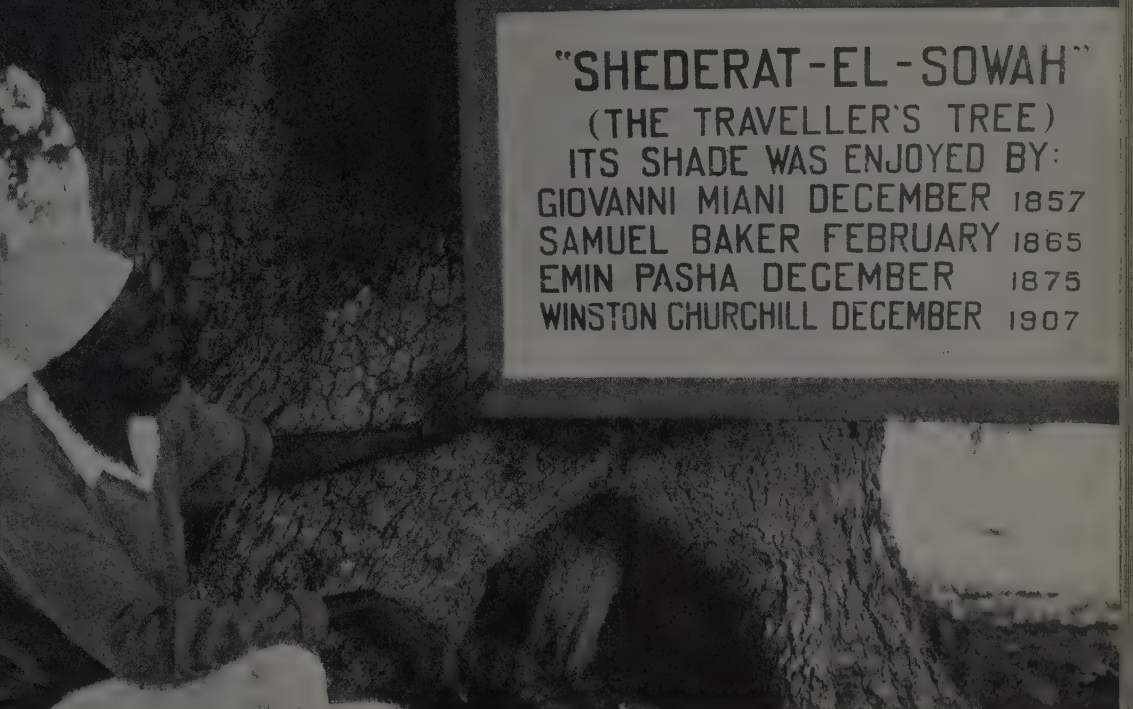
Above) Thatched tukls dot the 'residential suburbs' of Juba, which lies on a low ridge on the west bank of the White Nile and is the capital of Equatoria, a province covering 150,000 square miles. (Below) The matukas of the plain around Torit, east of Juba, are the most exotic of the Southern tribes; these crocodile hunters wear helmets trimmed with ostrich plumes, while one of them sports a tall 'bulrush' made of red feathers











## "SHEDERAT-EL-SOWAH"

(THE TRAVELLER'S TREE)

ITS SHADE WAS ENJOYED BY:

GIOVANNI MIANI DECEMBER 1857

SAMUEL BAKER FEBRUARY 1865

EMIN PASHA DECEMBER 1875

WINSTON CHURCHILL DECEMBER 1907

*Near the Sudan customs post at Nimule grows a fine old tamarind tree. Before rest houses existed in the Southern Sudan the traveller would often pass a night under a tree. If he came upon this one by day and the year happened to be 1907, he would sit in its shade and perhaps light a cigar*

through the floor and the place was infested. This particular scourge is sometimes got over by digging a miniature moat about three feet deep round the house. District Commissioners do this, and you have to be careful not to fall into it at night when stepping off the mosquito-netted verandah for a stroll among the palm trees and poinsettias.

There is an unearthly stillness at night in these parts of Africa. It gives depth to the note of the tom-tom, which in daytime sounds less resonant but much more urgent. On Sundays missionaries use the tom-tom to call their converts to church. Weekdays it takes the place of a works whistle, though not always. We once had to stop for a stick, planted in the road at the centre of a circle. It was a primitive form of sun-dial, used by a gang working near by, and it led me to remark that I never saw a native of these parts wearing a wrist watch. They asked us the time. We would want to know how far it was to the next village. They would say that it was a morning's walk, or that it would take from daylight to sundown and then a little more. There is no sense of time in Equatoria. The warm, sticky weather is broken into two seasons, dry and wet.

Ask of a child when he was born and the mother will say "during the rains", or "he came with the harvest", or "while the men were out hunting".

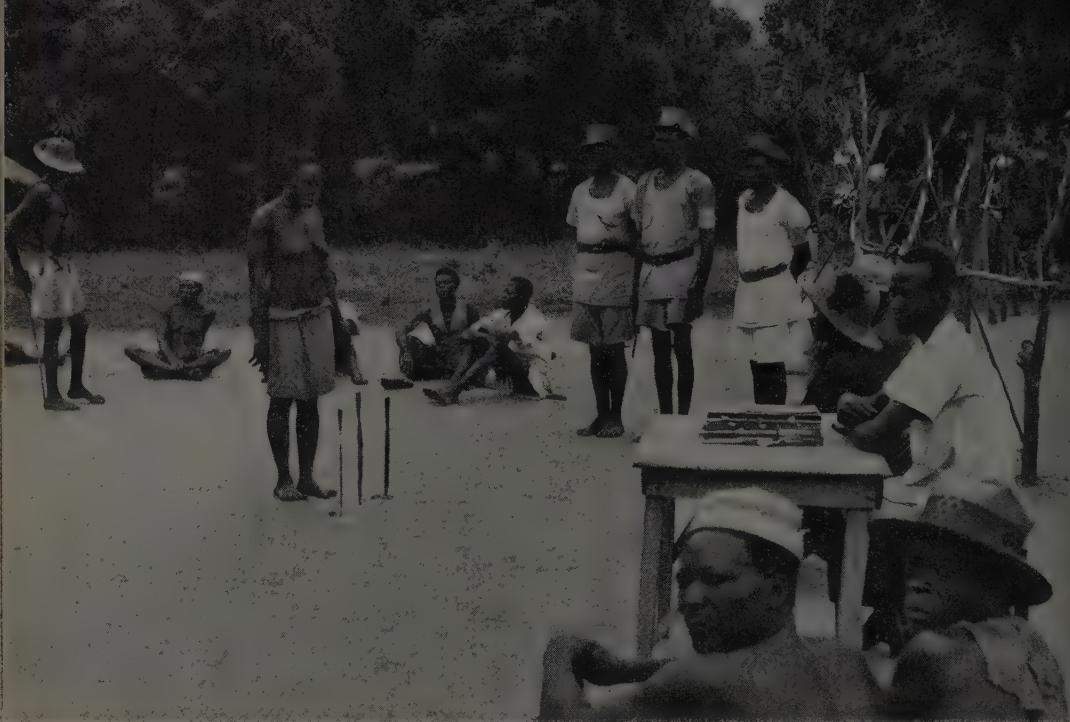
"He was born at night," she may say. "We call him *Bitimo*." And that is the Zande word for darkness.

"And this little girl?"

"*Nakatimanga*. The trees were loaded the year *Nakatimanga* came." A nice name, I thought, "the girl who picks mangoes".

The fact that the ages of their pupils is sometimes difficult to guess does not worry government or missionary school teachers. Their real difficulty is to supply the demand for staff at bush and elementary schools. Secondary education has yet to come, but there are several intermediate schools, one of them bearing the honourable name of 'Dinkachester'. This is a new school, taking Dinka boys from a wide area around Tonj. It has an English headmaster. He told me that the boys had a cow each, which they milked twice a day for their own consumption. They got up at 6 A.M. to work in the gardens. They went naked during the early hours of the day, but put on shorts before going to classes. Instruction was given in





*A Zande woman pleading a case against her husband before a tribal court in the compound of Chief Zugumbeia of the Yambio district of Equatoria, in which province there are 200 such courts. The three spearheads are part of the bride-price of twenty paid by the husband to the woman's family*

mathematics, history, scripture, Dinka crafts and folklore, and in geography. The school year ran from April until mid-December, which marks the beginning of the hunting season in the Southern Sudan. The boys were then packed off home to join the chase. An interesting innovation was the engagement of a tribal adviser. His job was to see that feeding, discipline and school routine did not run counter to Dinka custom. A new cicerone was taken on every three months and his predecessor paid off with a fat bull.

The benefits of school education and health services are much reduced among peasant communities unless agricultural technique and output can also be improved. Sir Peter Mitchell, who is well acquainted with central African problems, has put it this way: "An ignorant man and his wife with a hoe are a totally inadequate foundation for an enlightened state of society, a high standard of living and elaborate social services". In the equatorial Sudan ignorance may be modified, but the hoe remains. Remoteness from

world markets makes it essential that the hoe should continue to be used and used to the best purpose. It is with this in view that the Azande are being resettled in Western Equatoria in a manner which will ensure steady productivity and a minimum of soil erosion for years to come. The centre of this experiment is Yambio, a pleasant little village nestling in a tropical park 320 miles west of Juba and reached by ironstone roads the colour of a red tennis court.

I arrived at Yambio at about three o'clock one morning. We had had an incident. Ditched in a rainstorm, our foot brake had gone. Running in second, we had quickly exhausted the petrol and had been stranded by night near some thatched *tukls*. The owner, having lost his brother, had called upon his neighbours to join in a dance. Such is the Zande custom. Two of the dancers volunteered to get petrol from about five miles away. So I gave them a tot of very valuable whisky, to which, handing in a melon skin for more, they referred somewhat unappreciatively as "English beer". Then





(Above) Strange customs and superstitions persist among the tribes of Southern Sudan. For instance, the Bongo of Tonj, in the Equatoria Province, adorn their graves with pinnacles of wooden discs and the carved horns of bulls which belonged to the deceased, who is buried on the site of his tukl, or at some spot where he was accustomed to sit. (Left) The Bongo believe that these five stones fell from heaven in an earthen pot and that the greatest misfortune will befall anyone who makes a false oath at this shrine. Chief Bongo has one of his tribal police with him, rhinoceros whip at the ready to deal with a possible culprit



*A Sudan Government intermediate school at Atar, Upper Nile Province, which provides for the education of over one hundred Dinka and Nuer boys. There are numerous elementary and intermediate schools, though the problem of obtaining adequate staff remains a serious one. Secondary education has yet to come*



*A new intermediate school for Dinka boys, bearing the honourable name of 'Dinkacheater', is being erected at Tonj. An innovation is the engagement of a tribal adviser to see that feeding, discipline and routine do not run counter to Dinka custom. Besides academic subjects, the boys learn crafts and gardening*



*Protestant and Roman Catholic missions also carry on educational work. These boys of the Bussere Catholic Mission School, founded by the Verona fathers near Wau, have their own brass band. About 400 Italian missionaries were allowed to continue their work in the Southern Sudan throughout the second World War*





*The benefits of education are proved in the realm of agriculture. At Meridi, in the Equatorial Province of Sudan, where mangoes rot by the wayside, these Southerners experiment in pomology. Their object is to produce a better mango by grafting onto African trees an Indian variety supplied by government agriculturalists*



(Left) Dentistry  
Zandeland is practised  
native' dispensers of  
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they slipped my note into a cleft stick, a precaution against crumpling and smudging, and left at the double. Their mission was successful.

The idea at Yambio is to produce new crops, not normally grown owing to the high cost of export freight rates, and which can be processed for local consumption. Cotton, sugar and oils for soap manufacture have been chosen as the most useful. The Sudan Government, whose earlier enterprise in supporting the Gezira scheme in partnership with tenant farmers and plantation syndicate has proved a success (see *The Geographical Magazine*, May and June 1939), is putting up £500,000 for the Yambio project. The installation of cotton ginnery, spinning and weaving mills, power plant, housing, welfare amenities and water supply costs a great deal in these days, but the outlay is thought to be well worth while as it will give the Zande people 3,000,000 yards of cotton piece goods every year. It will provide for a production unit in the very heart of Africa for cloth, sugar and soap, to be distributed at cost price to tribes who have never before been able to buy these things. The factory site is at Nzara, about fifteen miles from Yambio. There, on a ridge above a little river and in a clearing cut deep into the woodland, I found the British chief engineer going ahead like a house on fire.

"I want more bricks," he was saying. "They're only making me five thousand a day. Not enough. Kilns? Over there. Lucky to have clay on the spot and building sand from the river. Sawmills, workshops, we're all set. If anything holds us, it'll be girders and corrugated sheets. They come from the other side of the world. Industrial site—400 yards by 300 yards. Ginning, spinning and weaving mills, power station, oil mill, store sheds, petrol dump, workshops, garage, offices!" He pointed here, then there. "This way nine houses—residential type—British managers and engineers. That way fifty-six four-roomed 'desirables' with forty yards square. Northerners' quarters: accountants, electricians, storekeepers, foremen. We've got a round hundred Northerners now. Doing masonry, carpentering, painting. They say they want more *durra* flour. 'Send me *durra*,' I wire. 'Can't send perishables,' they say. 'It's my men are the only perishables,' I tell them. Here in these backwoods. Wood everywhere. What I want is more bricks."

Girders, corrugated sheets, even bricks—these, I felt sure, would be forthcoming. But what of the cotton? This was for the agri-

culturalist to explain. He and his colleagues were at present resettling about 30,000 Zande families on 500 *balias*, a *balia* consisting of sixty holdings of forty acres each. One acre on every holding was earmarked for cotton. Two or three would suffice for a tenant's grain and vegetable crops. This would allow for a ten-year rotation over a strip of forty acres and obviate the danger of soil erosion. The Zande custom of moving house whenever a member of the family died, or some serious misfortune intervened, had been discussed with the chiefs, who agreed that the size of the holdings was sufficient to allow for this. There would be no difficulty, they believed, in producing a target of 50,000 small kantars (1 s.k. = 1 cwt. approx.) by 1949. About half this quantity would be cropped next spring from the 13,000 holdings already settled. The same policy of combining peasant production with centralized processing methods, clearly of greater benefit to the African native than the plantation system, was to be applied to sugar and oil. Presses would be established, if possible under native control and ownership. There was one working in a near-by village. There, small quantities of jaggery sugar were being turned out on the spot. As soon as the factory at Nzara was ready, the sugar and oil would be bought in from peasant producers for manufacture in bulk. The native would get his cloth at about eightpence the yard, his sugar for about threepence per lb., and cheap soap, without which it would be an unhygienic thought to offer the women of Equatoria material for printed frocks.

I do not wish to over-emphasize the importance or future prospect of this form of social economy. Self-sufficiency is not a target to aim at in an interdependent world. But here is a case, a rather rare one, where geographical isolation has been the decisive factor. The Negroes and Nilotics of the Southern Sudan must either avail themselves of outside help for the development of their welfare from within, or they must remain in a very primitive condition. Either they detach themselves under enlightened guidance from restrictions imposed by customs and superstitions, or they struggle on within the magic circle of their own imaginings. Let me illustrate:

I was sitting one evening at the edge of a gallery forest in the Imatong Mountains on the Uganda frontier. I was thinking how pure was the air up there at 6500 feet. There had been strawberries on the rest-house tea-table and sweet peas in the vases. The turf outside was a mossy mattress. Clouds lay



(Above) Even remote villages of the Southern Sudan have small shops, though consumer goods are few. The merchant buys chillies for export and honey and rush mats for resale, and also hires a local man to make cheap clothes from imported piece goods. (Below) One object of the £500,000 Yambio scheme is to grow and process sugar for the equatorial tribes. Already produced in jaggery form it tastes very good to these piccaninnies







*All photographs by the author*

*As part of the Yambio project to improve the Zande standard of living by raising new crops and processing them for home consumption, a factory is being built at Nzara in the Southern Sudan where native labour will gin, spin and weave locally grown cotton. An annual production of 3,000,000 square yards of cotton piece goods for sale to the Azande at cost price is hoped for by 1950*

snugly in the mountain gaps. They hung over me now, giving shelter from the hot sun, just as the huge red-ribbed leaves of the wild banana gave shelter farther down the valley. The colobus monkeys were squawking in the tree-tops, and I, despairing of taking a picture of these elusives, was wondering what other wild beasts lay hidden in the thickets. Suddenly there was the most awful crash, a splintering of wood and much commotion among the branches on the far side of the gorge. A forest giant had fallen. It had drawn all it could from the soil about its roots; it had grown to immense stature; it had lived long and lonely and was now gone. A stillness followed, then the monkeys started up again. I fancied that they were telling one another of this disaster. There would be no more berries and nuts from that one. And it occurred to me that it was the same story as with the Dinka and his cow. The cow gives him milk. It is his main support in life. He trains its growing horns to take strange

shapes, so that when he wants to signal to a friend he just raises his arms above his head, twisted to resemble the horns of his cow. The Dinka becomes so attached to the animal that he will not kill it for meat. He lets it grow old until, as with the forest tree, there comes a day when something snaps. Cow and tree are dead and gone.

We think this a thoroughly uneconomic procedure. We are of the view that the tree would be better cut in its prime to supply wood, and the cow killed for meat. The primitive African would not entirely agree. Life for many of his kind is based on the instinctive harmony of man with what seems to him a world of forests, swamp and grassland. These physical features have done much to make the Negroes and Nilotics what they are. Swamp and desert to the north and west, south the Congo-Nile Divide and east the Abyssinian mountains. Until new trade routes reach him, the dark tribesman's outlook will be limited by these bounds.

# British Artists Abroad

## III. Thomas and William Daniell in India

by GRAHAM REYNOLDS

*In the third of his series of articles Graham Reynolds deals with the topographical record of India made in the late 18th century by the Daniells. In his first article Mr Reynolds wrote of Captain Cook's draughtsmen (February) and in his second, of the work of Alexander and Chinnery (September)*

WHEN the rule of the East India Company began to move most rapidly towards its ultimate bounds in India in the second half of the 18th century the state of the arts in England was unusually flourishing. The age of Reynolds and Gainsborough in portraiture, of Wilson and Cozens in landscape painting, was incontestably the great era of our national school; and this healthy state was manifest not only in the quality of the best artists, but also in the numbers who sought, and many of whom found, a competence in the practice of painting or drawing.

It was inevitable that the rumours of the great wealth of India should attract some of these professionals into Eastern travel and adventure. The riches of the nabobs of the Company, the fabulous wealth of the native rulers, were an incentive to many unsuccessful and some successful artists to try their luck in India. Over sixty are recorded to have paid visits there in the years between 1766 and 1820.

The first eminent landscape painter to be so employed was William Hodges, R.A. His experiences as draughtsman on Captain Cook's second voyage have been illustrated in the first article in this series. These had infected him with the thirst for travel, and three years after his return home from the long voyage with Cook he set out for India, in 1778. After an abortive attempt to find patronage in Madras he was encouraged by Warren Hastings in Calcutta, and enabled to visit the picturesque towns of Upper India, including Benares and Agra. On his return home he published a series of engravings in aquatint from the sketches he had made. Brilliantly coloured, and with much of the dash of his paintings of the Southern Seas, these have an infectiously exotic appearance. Humboldt, the great German naturalist and cosmographer, said that the sight of Hodges' Indian views was one of the inducements which led him to travel.

Certainly it was with a wary and jealous

eye on the popularity of Hodges' prints that Thomas and William Daniell set out for India in 1785. Thomas Daniell was at this time a man of thirty-six. After serving his apprenticeship to a coach painter he had studied in the schools of the Royal Academy and had been practising for some twelve years as a landscape painter without exciting undue notice. His travelling companion and helpmeet, William Daniell, was his nephew, aged only sixteen when the voyage to India began. Later he was to rise to an eminence which equalled if it did not eclipse his uncle's fame, but it appears that his functions on this expedition were that of a learner—for instance, to help draw the outlines of sketches with the aid of a mechanical contrivance known as a *camera obscura* and to prepare copper plates for engraving. For practical purposes, however, the work of uncle and nephew is not separately distinguishable.

The Daniells having obtained the requisite permission to visit India from the East India Company set out via Canton in one of the Company's own ships and disembarked at Calcutta in 1786. Thomas Daniell lost no time in announcing his intention of issuing by subscription a set of twelve views of Calcutta. This task occupied the first two years of his stay in the country. He used in this, as in the subsequent sets of views of Indian scenery issued by himself and his nephew, the method of aquatint, then only newly introduced into English engraving practice. This process, with its broad washes of level grey tone, firm outlines and easy adaptability to colouring by hand was well suited to reproducing the drawings of the English school of landscape artists.

The views of Calcutta produced in this way are well known—the massively European classical architecture of the government buildings contrasting queerly with the elephants and gaily clad natives, while the views of the suburbs of Calcutta have a surprising atmosphere of the roads leading from London into Surrey.



But the artists had more ambitious schemes on hand than merely recording the first town in India they had arrived in. They set out by pinnace and subsequently on foot for a tour of Upper India which eventually led them to Srinagur and the mountains of Kashmir, over 1200 miles away from Calcutta. On this remarkable route they amassed sketches and studies which formed the basis of a noble series of engravings called *Oriental Scenery*, of which the publication commenced in London after their return to England six years afterwards. Here are to be found the notable architectural monuments of the route, both Hindu and Moslem. Here also are studies of the luxuriant plain of Bengal at the beginning and the sublime contrasts of the snow-capped mountains at the end of their journey.

The travellers set forth in a pinnace from Calcutta and proceeded up the Hoogly River to the Ganges. They followed the river as far as Cawnpore, having left the boat temporarily to visit Benares by palanquin. From Cawnpore they went across country to Agra and thence on to Delhi. Here, after some hesitation, and with the defection of much of their escort, they pressed on towards Srinagur. They had taken eight months to reach this extreme limit of their exploration.

William Daniell kept a diary of this adventurous expedition, which has been published, but it is a disappointing example of opportunities missed. He had no talent for description and shows surprisingly little awareness of the scenery through which he passed. Occasionally there is a note of actuality, as in the encounter near Rajmahal:

As we were tracking a number of *Faquieres* armed with spears, shields, Cutwas, large sticks—frightfully dressed, their faces smeared with White, & their necks loaded with large Beads of various colours came to beg—we were obliged to abuse them before they would leave us. They beg of any one they meet & will take what ever they want if it is not given to them kindly. They even carry their impudence so far as to go & sit down in poor peoples houses & tell them that they are come to die there & the only way of ridding themselves of such disagreeable guests is by giving them *whatever they ask for*.

When nearing the end of the journey, the sense of the hills becoming higher and higher and closing round them does infect this artless style with a little of the excitement to be found in the engravings of these same romantic scenes:

April 24, 1789. Abt  $\frac{1}{2}$  af 5 began to ascend a very steep hill—continued going on the edge of it till we gained the Top—from which there are *two very grand scenes indeed*. Were in hopes of seeing the Snowy mountains but were disappointed Owing

to the great haze. . . . Our Harcarrah (Bidasee) that we sent to Srinagur when we were at Coadwar brought a letter from the Rajah, signifying that the Rajah was very desirous of seeing us, & would be glad if we would make the best of our way to Srinagur. The Mountains which towered above us the whole Way was much ornamented with *fir trees* of an amazing height. There was also the *Prickley Pear* of a very large size. Met with the *Larkspur* to day growing wild. Our tent was pitched between two small rills on a beautiful knol.

April 26, 1789. From Natan ascended a very high mountain, from which We had a glorious view of the Snowy ones, or rather *regions*. The height of them far exceeded any of our expectations—they disappeared soon after the Sun had risen. On our march saw many very noble Scenes—most of the mountains cultivated from the Top to the bottom—the Cuckoo the only bird we have seen or heard for many days.

April 27, 1789. . . . Began to descend very considerably to the *cundar Nulla*—abt 6 Koass—crossed the Nulla & ascended a Hill of abt a Mile from the top of Which you command a very fine view of *Srinagur*, which had very nearly the appearance of a Chinese Town, & the *Ganges*. We then descended abt a Mile & pitched our Tent a little to the SW of the Town very near the Ganges. Immediately after our arrival the People flocked round us in great numbers, we being the *first Europeans that had ever visited Srinagur*.

The return journey eastward was made in a more leisurely fashion, by way of Lucknow and Jaunpur. After staying a year in Bhagalpur with Samuel Davis, a Company servant and himself an accomplished artist, they reached Calcutta again in 1791. Their thirst for travel was, however, not exhausted, and a year later they set out again, this time to the extreme south of India. Going by ship to Madras, they spent six months in a round which included Bangalore, Madura, Tinnevely in the extreme southern tip, Trichinopoly and Tanjore.

The artists intended to make their survey of the Indian scene even more extensive by a visit to the western coast, and then to return from Bombay through Egypt. But the disturbed state of the interior prevented them travelling far in the region of the Western Ghats; and they had gone from Bombay as far as Muscat in Arabia on the return home when the outbreak of war between England and revolutionary France brought about a change in their plans. A letter arrived at Muscat from the East India Company's resident at Basra offering a reward of 10,000 rupees to anyone who would carry to Bombay a packet containing the first official intimation of war between England and France. Major F. R. Macdonald earned this reward by setting out with it immediately; and the

Daniells went in the same ship with him back to Bombay. In consequence they claimed a portion of the prize money, but it seems that they were unsuccessful. Once again they set out home from Bombay, this time by way of the Cape of Good Hope.

The uncle and nephew made good use of the artistic capital they had accumulated during their incessant travelling and sketching. In 1795, the year after their return to England, they published the first series of their *Oriental Scenery*, comprising twenty-four large aquatint plates of views from their tour in Upper India. In the twelve years which followed they published five other similar series, the total amount comprising 144 plates—a truly monumental achievement of topography. The size alone is impressive—not merely the number of plates but also their physical dimensions, for each measured 26 by 19 inches. This large format adds to the power of the designs, as can be seen from the loss they sustain by reduction. Many though the published subjects were they did not exhaust all the material accumulated in India. Other sketches were the basis for drawings and oil paintings exhibited by the Daniells at the Royal Academy and elsewhere.

The illustrations which accompany this article are selected from the plates in *Oriental Scenery*, and the choice gives, so far as is possible in a small compass, a cross-section of the variety of the full work. The view at Bandell is typical of the luxuriance of the scenery in Bengal which the travellers saw on first setting out from Calcutta on their long westward journey. Bandell is an old Portuguese settlement, and its agreeable climate is recorded in the couplet:

Each other place is hot as Hell  
When breezes fan you at Bandell.

The letterpress to this plate explains that the small monument and obelisk commemorate the death of unfortunate women by *Suttee*. Next in order of visit was Delhi, and here the Daniells showed a sensibility in advance of their time by making an exciting pattern out of the large, unfamiliar buildings of the observatory. These remarkable instruments were erected by the great astronomer prince, Maharaja Jai Singh of Jaipur, a mathematician who was versed in both Occidental and Oriental methods of astronomy and thought, by building instruments large enough, to obviate the inaccuracies of small ones.

The scene in the mountains of Kashmir was taken close to Srinagur at the extreme

western limit of the journey, and on the return journey the mosque of Jaunpur was one of the many monuments of Moslem architecture which the Daniells sketched sympathetically and with surprising accuracy.

The sketches for the remaining plates were made on the later southward journey of 1792. The first in order of composition is that representing a Hindu temple at Bangalore, which was disused when the artists visited it, owing to the absence of a religious establishment. Letterpress accompanying the scene near Atur in the Dindigul district remarks that the place is inhabited by "a class of creatures whose shaggy forms and ferocious aspect appears a vision to strike terror in the hearts even of lions and tigers". Of this type of southern scenery with its disconcerting effect of extreme antiquity William shrewdly notes in his diary:

The hills that appeared to day were small, rocky, & very bare of Wood—these Rocks are chiefly of a light grey tint on a dark ground with here & there patches of dark Green, from which circumstance the hills had a very spotty & disagreeable effect particularly when seen near, & the sun shining on them. Even in the second ground they were out of harmony, unless the sun was low & behind them, which gave them indistinctness—but in the distance when haze softened the whole they were very picturesque as the forms of most of them were good. Rocks of all forms & sizes, tinted as one could wish & grouping with the Wild Aloe, made very rich foregrounds. The Clouds now & then broke over the Tops of some of the ragged hills which improved them in shape as well as colour.

At Madura the great Hindu temple with its characteristic and richly ornamented gateway was a natural subject for them; and the southernmost extremity of this journey is illustrated by the sin-effacing waterfall of Papanasham in the Tinnevely district.

The Daniells possessed, to a degree surpassed in their own day only by John Robert Cozens, the facility of making a telling design by the proper framing of the landscape or architecture they were drawing. By devices similar to the close-up of the cinema they bring out the height of buildings, the distance and impressiveness of mountains. In addition to the great artistic merit of this unrivalled panoramic record of an immense tract of India their work has other and more historic claims to interest. Humphry Repton made use of it when preparing some designs in the Indian style for the Pavilion at Brighton; and when the temple in the Fort of Rhotas was restored by the Government of Bengal, the Daniells' view served as a model.





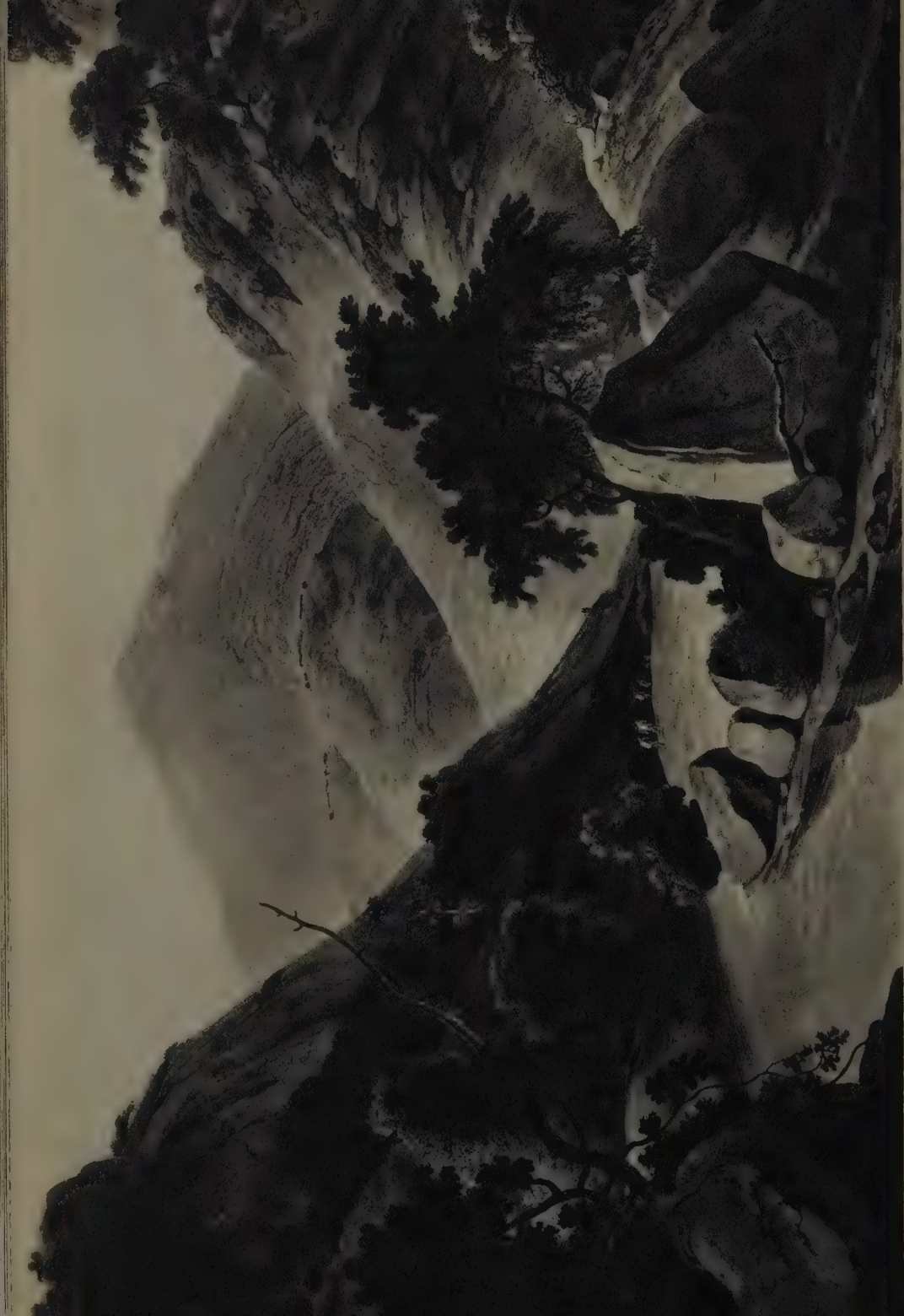
*One of the towering gateways of the 17th-century Hindu temple at Madura, as depicted by the Daniells*







*In the foreground of Maharaja Tai Singh's observatory at Delhi, the Daniells emphasized the enormous sundial, with ramp raised to form the gnomon*



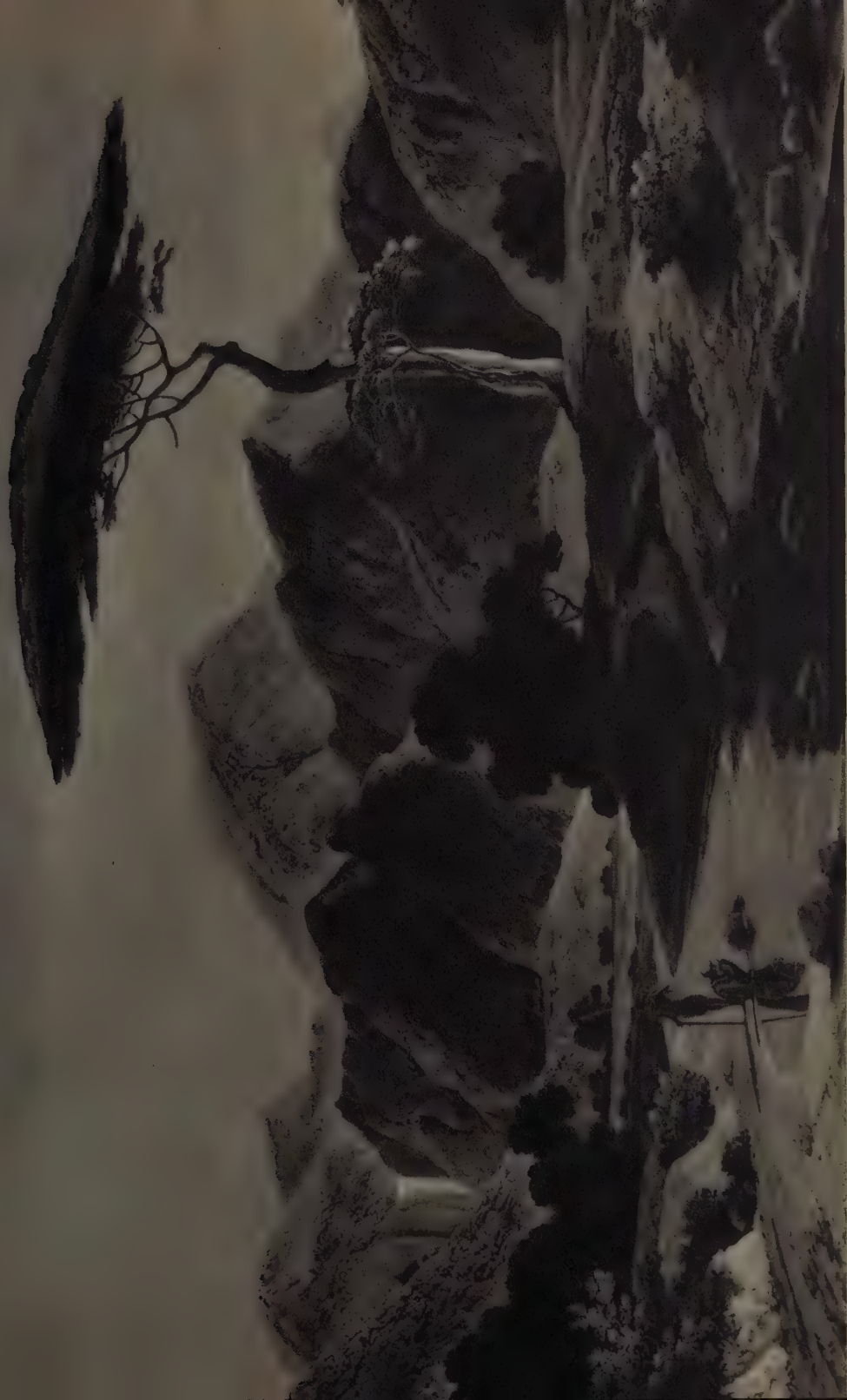




—and, in the extreme south, to the sacred waterfall of Papanasham in the Tinnevely district. Its name implies that it washes away sin







*Stunted vegetation and barren hills, in the Dindigul district of Madras, gave the Daniells another opportunity for effective contrast*



*All reproductions by courtesy of the Victoria and Albert Museum*

*Along with the extravagances of Hindu temples, the Daniells recorded the calm of the Muslim mosque at Jaipur*



# American Indian Map Makers

by C. A. BURLAND, F.R.A.I.

IF you had been invited to share a good meal at a country house and had then lost both your way and your dinner you would feel that there was a very practical value attached to a map. Primitive men on hunting parties must have often faced such a difficulty. Their first response seems to have been the invention of "road-signs" to help each other on the trail.

We don't know if that kind of thing happened in Europe. Our hunting ancestors became half-civilized so long ago that any signs and maps they made have disappeared. However, it was only a few centuries ago that many Red Indian peoples were in a state of civilization not unlike that of early Neolithic Europe. To the Indians the marking of the trail was of vital importance for hunters, traders and war-parties alike. They would blaze the trees, or put broken twigs along the road to show the way (as Boy Scouts learnt from them!). They even left letters in picture-writing.

In 1820 Henry R. Schoolcraft was travelling through the Ojibwa country on the U.S. Exploring Expedition for the Discovery of the Sources of the Mississippi. Here he is, reporting to the Secretary of State for War: "The next morning, as we prepared to leave the camp, a small piece of birch bark, containing devices, was observed elevated on the top of a split sapling, some eight or ten feet high. One end of this pole was thrust firmly into the ground, leaning in the direction we were to go. On going up to this object, it was found, with the aid of the interpreter, to be a symbolic record of the circumstances of our crossing this summit. . . . The entire record . . . accurately symbolized the circumstances; and they were so clearly drawn, according to their conventional rules, that the intelligence would be communicated thereby to any of their people who might chance to wander this way."

The simple direction-sign was not the perfection of Red Indian cartography; neither was it the result of long contact with the white man. Jacques Cartier on his third voyage, which took him up the St Lawrence in search of Saguenay, was questioning his guides at an Iroquois village where there was a fall in the river: "The people showed us and gave us to understand that we were at the second Sault and that there was but

one more to pass, that the river was not navigable to go to Saguenay, and that the said Sault was but a third part farther than we had travelled, showing us the same with certain little sticks which they laid upon the ground in a certain distance, and afterwards laid other small branches between both, representing the Saults. And by the said mark, if their saying be true, it can be but six leagues by land to pass the said Saults." Here was a map outlined with twigs, and in addition the Indians were able to inform Cartier that there were great fresh-water lakes ten days' journey farther along the river, and that one of them was in a country where copper was plentiful.

In fact the Indian tribes had a quite good knowledge of their continent. In 1585 when Ralph Lane came with the second English expedition to Virginia, the Croatan Indians told him of a trail towards the headwaters of the Moratoc River, which led for 160 miles to the country of the Mangoaks and on to the land of Chaunis Temoantan; beyond this the trail led through some mountains and on again, thirty or forty days, to a land where copper was common. "Gold!" thought the explorers, though they should have known better. However, by the time Lane's expedition had reached the Mangoaks it was obvious that the tribes were banding together to destroy the strangers, and the difficult country, combined with an occasional arrow, made the commander decide to abandon the journey. Lane himself was regretfully inclined to think the story he had heard was true. "Even if the metal was only copper," said he, "the ore would be richer than was ever heard before." This adventure was almost bound to end in failure. For one thing the travellers knew nothing of the etiquette of the trail, and for another the journey would have proved too long for them; the Indians' forty days' trail meant nearly 900 miles to the copper-bearing regions of Lake Superior.

Less than a century later we hear of a far longer route; a band of young men from the Iroquois of New York State went on the war-path and brought back captives from the Black Hills of South Dakota. This was a journey indeed for men without horses—1700 miles each way by Indian trail.

In the eastern U.S.A. and most of Canada,

the trails were conditioned by the forest that covered the land. Wherever possible travellers used their birch-bark canoes to reach hunting grounds and village sites. The local idea of a map was a chart of the waterways. In 1605 Samuel de Champlain, sailing south from Acadie, called on an Indian settlement, where a native, possibly a Penobscot, drew a map in charcoal that covered all the coastal waterways, including the Merrimac River and the whole of Massachusetts Bay. We no longer have this document, but we may gain some idea of the nature of the maps of the forest Indians by the remarkable drawings of Shanawdithit, a young woman captured from the Beothuks of Newfoundland in 1829. She lived only a little over a year among the whites, but given pencils and paper she produced a picture history of her own experiences. Her maps were not drawn to any scale and her method was to construct a picture sequence of all the local waterways. Every stream and waterfall, every large rock, island, and camping site was recorded in order, together with trails and pictures of events, for which she used a black pencil for the white men and a red one for the Indians and their trails. One of Shanawdithit's maps covers some 200 square miles of country around the headwaters of the Exploits River, drawn so accurately that every point could be identified by a stranger fifty-five years after her death.

The Indian trails in the forests were like footpaths, about half a yard wide; often they were first blazed by the animals of the woods. No greater width was needed, for in the whole continent there was no beast of burden other than the dog. Diplomatic missions between tribes, hunting expeditions, and the long trading journeys for pipestone and precious copper were all performed by men marching in Indian file, with packs on their backs and spare moccasins in their girdles. Within one's own tribal territory it was easiest to travel with the birch-bark canoe from river to river, with short portages, but in strange territory rivers could be dangerous. Cortés, writing from Honduras in 1525, gives a graphic picture. He had made some rafts for his small force to travel with his canoe down a river: "The Indians who knew the river well, as inhabiting its banks, and being almost born on it, had followed us for some time along the shore, knowing very well that we should be cast up by the current on the very spot where they were waiting in ambush for us. No sooner, therefore, did the canoe and rafts reach the place where the Indians lay concealed than we were assailed by a volley of arrows from

the shore, that wounded almost every man on board."

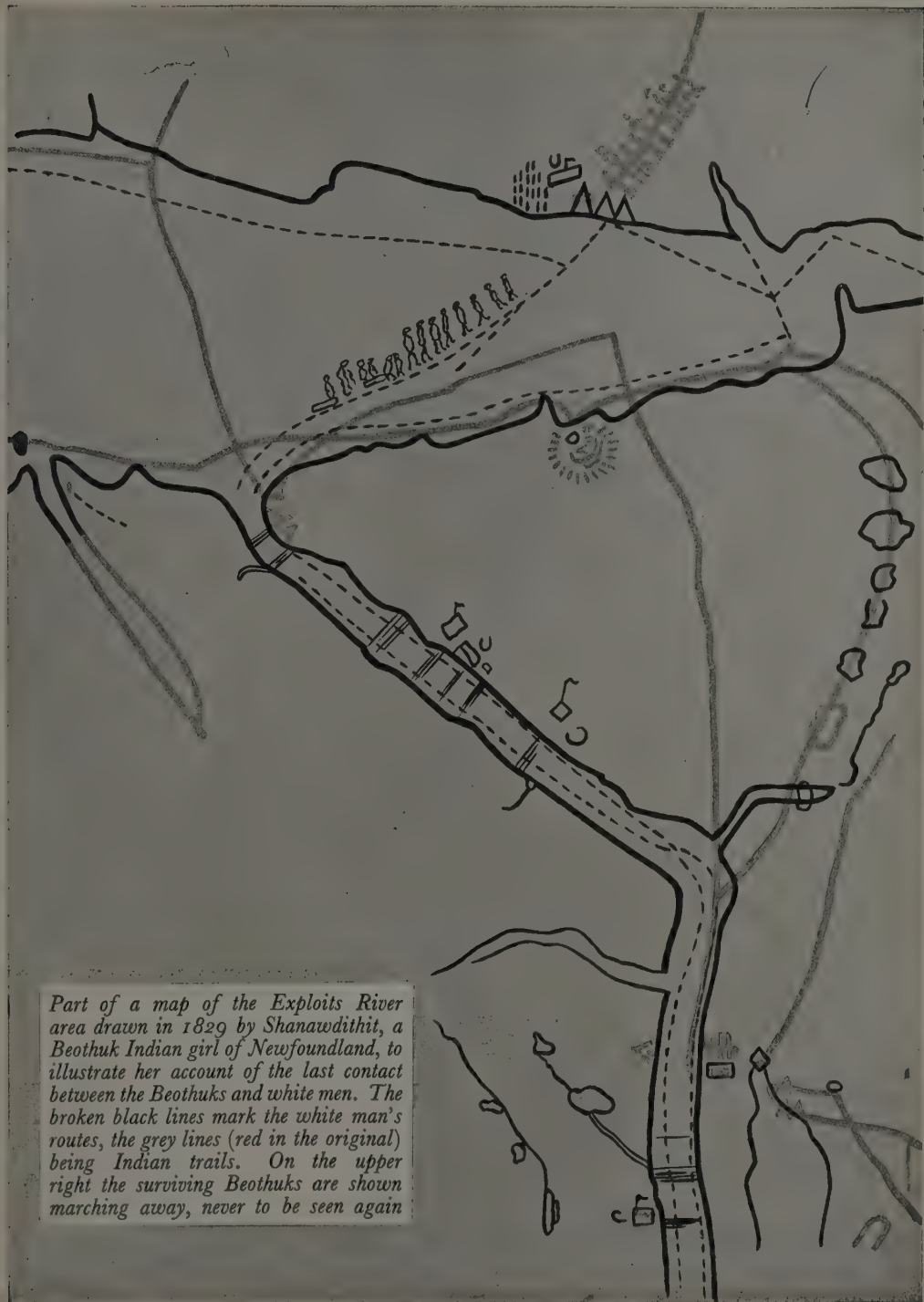
Unless travellers in the lands of strange tribes were sure of protection by the recognized system of diplomatic immunity which obtained among the Indians, or had some accepted symbol of supernatural protection, they went on foot. The trails avoided large rivers and villages, and if possible followed the firm dry earth of the hillsides at levels where the rocks were not too harsh on soft moccasins.

One famous trail was almost a transcontinental highway. It began at the St Lawrence, and travelled along the western slopes of the Alleghany Mountains; then, reaching the easily fordable streams of the headwaters of the Ohio, it turned west and followed high ground on the south side of the Wabash to a point where that river could be safely crossed *en route* for Cap St Antoine on the Mississippi. This was the end of the trail for most travellers, but there was a continuation through the dangerous border country between the hunting grounds of the Osage and Pawnee tribes, which went across the endless prairie and then divided into tracks which were later to become the Santa Fé and Oregon Trails.

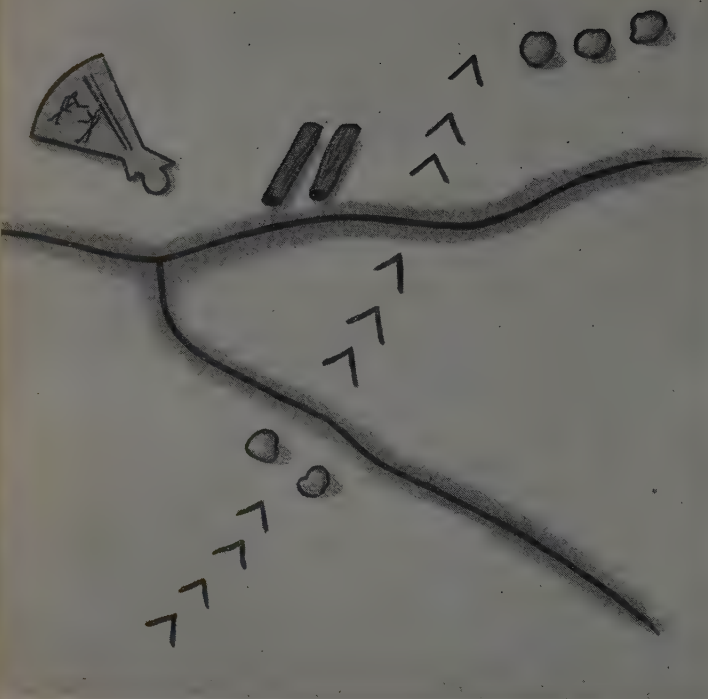
In ancient days no individual can have known the whole of that stupendous footpath, and no wise old chief could draw a map of the whole route. When the Jesuits first came seeking the Mississippi they were guided from tribe to tribe, each contributing new information. It was too rarely, however, that the tribes were at peace for much ordinary traffic to go along the trail; swift and silent war-parties and lonely trappers were its frequenters, captives came along it on their way to death or adoption, often the missionaries returned along it to almost certain agony in the torture fire. Later came the redcoats, and then the farmers; and the old trail was almost forgotten.

On the prairie the trail was often a beaten road made by the hooves of five million bison on their seasonal migrations. Most of the tribes, however, could make their own trails, though the prairie was as vast as the sea and equally featureless. In 1541 Coronado was lost there. He fell in with the Teyas, a tribe with dogs to drag their skin tepees as they moved across the country seeking their buffalo meat. It was these people who showed the Spaniard how to travel in a straight line across the plain by shooting an arrow in the direction one wanted to go, then walking towards it, shooting another over it before it was reached, and so continuing with two arrows always in front of





Part of a map of the Exploits River area drawn in 1829 by Shanawdithit, a Beothuk Indian girl of Newfoundland, to illustrate her account of the last contact between the Beothuks and white men. The broken black lines mark the white man's routes, the grey lines (red in the original) being Indian trails. On the upper right the surviving Beothuks are shown marching away, never to be seen again.



*Copy of a Blackfoot Indian message map; originally drawn on the soil, it related, with the aid of coloured sticks, stones and bones, the story of a journey and battle in enemy country*

one to mark the straight route. If they wanted to return with less trouble, they made piles of buffalo droppings, or of stones, if any were to be found, to blaze the trail. These people carried a map in their heads, for they were never at fault in determining the general direction of the day's objective. It is not strange to find their more recent descendants making true maps.

All the tribes of the great plains drew maps as a matter of course. The usual procedure was to trace them on the ground with a stick. They showed the river systems in such a way that anyone knowing the country could understand which rivers were intended. When describing the way, they would point out natural features to the traveller and mark the mountains by making little heaps of stones. Sometimes they needed to leave messages for friends, and then, once again, the earth-map was used. Clark Wissler gives a full description of the system in his *Social Life of the Blackfoot Indians*. In brief, the river system was scratched in the earth,

pebbles being added to mark the camping places, yellow pebbles for day camps and black for night ones. Red sticks meant enemies, and if any additional message was required a picture was left drawn on a scrap of skin or a piece of bone. Friends were shown as black sticks with a piece of tobacco tied to them to symbolize a peace-pipe. V-shaped marks represented the two-stick *travois* on which the burdens of the travellers were carried dragging behind their horses (or dogs in the old days). The message was of no use unless the map was understandable.

Farther to the south the agricultural tribes of the Mississippi Valley knew a lot about maps. It is true that De Soto made no mention of maps during his journey of 1540 to 1541, but as the whole conduct of the expedition was brutal in the extreme no Indian was willing to give free advice. De Soto took guides from the tribes and forced them to lead the way with chains round their necks. If they led him aright they were sometimes released; if they led him wrongly they were thrown to the dogs as living meat.

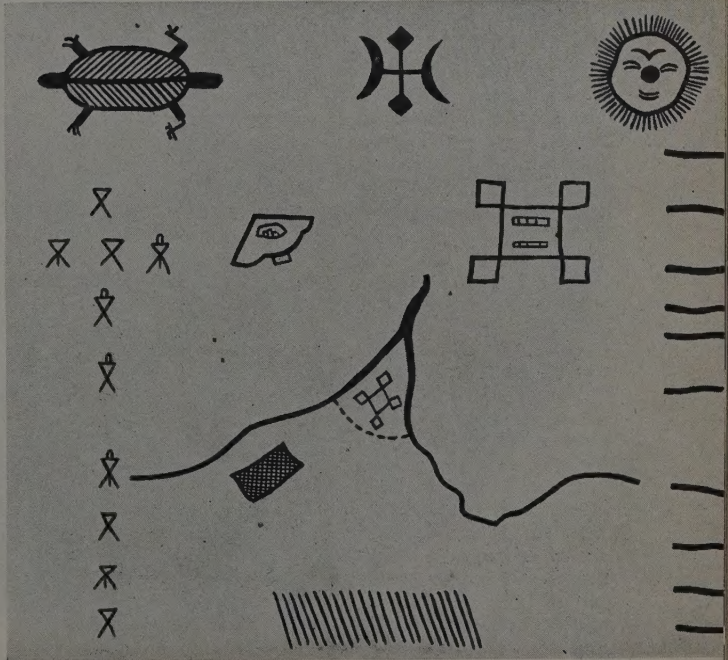
A century later the Indians were drawing maps for a more respectable traveller. In the summer of 1685 the Sieur de La Salle was seeking to reach the Mississippi from the west; here is an account of the expedition among the Caddo on the Angelina River in Texas: "The Sieur de La Salle made them draw on bark a map of their country, of that of their neighbours, and the river Colbert or Mississippi with which they are acquainted. They reckoned themselves six days' journey from the Spaniards. . . ."

The Indians of North America used maps not only for describing routes, but also as illustrations for other purposes; for example, the plan of the location of clans of the Chippewa in their petition of 1849 to the President of the United States, or the remarkable little history of Wingenund, war chief of the Tortoise clan of the Delawares. This last, the oldest representation of an Indian map from north of Mexico of which I know, appeared in Vol. VI of *Archaeologia*, 1782. A memorial to Wingenund, cut on a tree





The Indians of North America used maps for purposes other than describing routes. One example here shown (above), originally drawn on birch bark, formed part of a petition of 1849 to the President of the United States asking for a retrocession of lands. The three eagles, three bears, duck, elk and catfish were totems of the heads of nine Chippewa families living around the Lac de Vieu Desert, Wisconsin. Another example is the copy (right), made in 1780, of an inscription on a tree beside the Muskingum River, Ohio. It commemorates the exploits of Wingeneund, war chief of the Tortoise clan of the Delawares, recording attacks on Fort Pitt (centre) and Detroit; his total number of expeditions (bottom); his braves (right); captured or scalped foes (left), and tribal symbols (top)

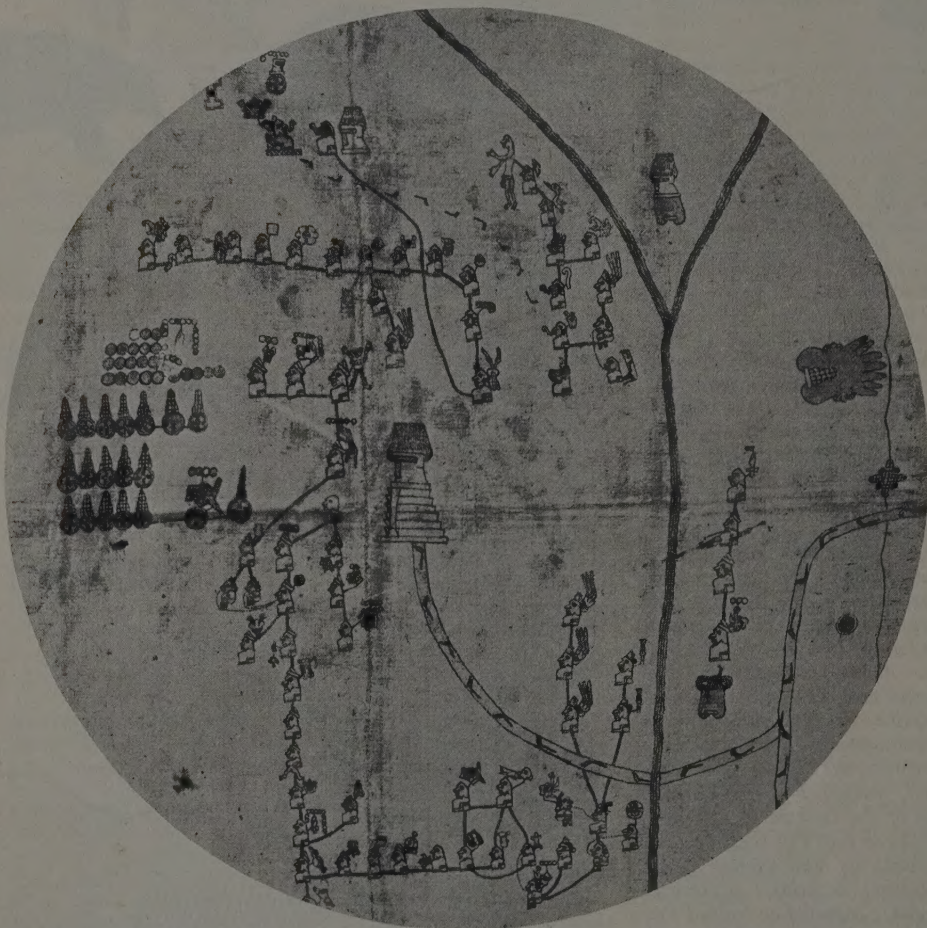




from which a square foot of bark had been removed, records how the chief led his party of twenty-three warriors on ten war expeditions: one was to Detroit, marked by two canoes drawn on the fort to show the idea of "narrows", implied also in the French name; another trip was to a small fort on Lake Erie, and a third was to Fort Pitt (now Pittsburg), identified by a map of the junction of the Alleghany and Monongahela Rivers in western Pennsylvania.

Farther to the west and south, however, maps were, like those of the prairie tribes, drawn in the earth. The Caddo, who drew their map for La Salle, had been for over a century in contact with the Pueblo Indians of New Mexico. De Soto found them in possession of turquoise and cotton cloth which

had undoubtedly been traded from the Pueblos, probably Taos. We know that people who had seen the Pueblos were able to follow trails into Mexico as early as 1530, but we know little of Pueblo maps before 1856, when they were made on the soil and included an ambitious attempt at relief construction by the Tewa people. Rather simpler earth-maps were made by the Yuma and Paiute of California, but both tribes were able to draw the course of the Colorado River. For a long way south of them the country was poor and desolate; the tribes, having little food, were small and scattered and were not given to any arts of civilization, though trails, as has been said, led through their country from Arizona nearly to Mexico City. From Mexico we have plenty of maps







Both maps by courtesy of the British Museum

(Opposite) From an Aztec Indian map of the Metlacoyuca district in the north of the state of Puebla—found in 1866 under the ruins of the temple shown in the centre. Amidst paths, rivers and settlements appears the genealogy of local noble families. (Above) The valley of Tepetlaoztoc was painted by Mexican Indians in 1583 as a preface to their petition against oppression by Spanish landlords. Roads, rivers, forest and broken ridges are shown and glyphs indicate the place-names

—of rivers, of roads, of towns, of buildings.

The Aztec culture was sufficiently on the way to feudalism when the Spaniards arrived for it to be necessary to have maps of land under the control of chiefly families. The boundaries were noted down with meticulous accuracy; temples, roads, streams, villages, all were there, and often in the centre a figure of the original chief of the district and the catalogue of his descendants. Two of the best of these maps are preserved in the British Museum. One of them, on cotton, describes the boundaries and the chiefs of the town of Metlacoyuca. Probably made within a few years of the conquest, it was found intact in a stone box in the ruined temple at Metlacoyuca itself. Thus was preserved the largest surviving piece of ancient Mexican cotton cloth, a charming map with its curling rivers and little brown roads. The chief sitting by the temple is almost like a Disney character, and linked to him by the ropes of kindred are all his descendants marshalled in order, that one might

know who was who in that select company.

The other map was made in 1583, and was part of the petition against the exactions of the colonists who had been granted the lordship of the valley of Tepetlaoztoc. The map is in two versions, the first abandoned at an early stage because of some inaccuracies of placing the boundaries. The second map of Tepetlaoztoc is completed in full colour, and is filled with forests and hills, streams and the broken rocks of an old lava flow. On the left, near the mouth of the valley, is the town of Tepetlaoztoc, marked by a temple (shown upside down) and a glyph which was read by the Aztecs as "Stony Cave" (*Tepetlaoztoc* in their language). From other documents which survive from pre-Columbian days we are justified in assuming that the Indians of Montezuma's barbaric empire used place-name glyphs to mark localities on all their maps. The scale is just as vague as in the north, but so many more details have been put on the map that it can be used for far more than finding a trail. These maps, the



work of Red Indians, have become more precise, because they were the product of a more complex state of society in which greater accuracy of record was needed.

The Mexicans also possessed topographical maps which covered with considerable accuracy very large areas. Cortés, in his fifth letter to the Emperor Charles V, describes the making and subsequent use by himself of what appears to have been a very accurate plan of the Yucatan peninsula and some part of Honduras, probably covering a space of nearly 500 miles in each direction. Here are the relevant parts of his story: "I dispatched messengers to Tabasco and Xiculanco, informing the lords of those provinces of my intended journey . . . they sent me seven or eight worthy men duly authorized, as they are in the habit of doing on such occasions. Having inquired of these men many things which I needed to know about the land, I was told that on the sea-coast, beyond the region called Yucatan, towards the Bay of the Asuncion, there were certain Spaniards who did them much harm. . . .

"Some of them who had been in those parts, described to me most of the villages of the coast, as far as the place of residence of Pedrarias Davila, who now governs these regions in your Majesty's name; and drew on cloth a figure of the whole land, whereby I calculated that I could very well go over the greater part of it, and in particular over that portion of the country which was pointed out to me as the abode of the said Spaniards."

Later in his journey he found his land forces in great difficulties among the rivers and morasses of the Boca de Terminos. "From this province of Cupilco I was to proceed, according to the sketch or map given to me by the people of Tabasco and Xiculanco, to another province called Ziguan, but as the natives of those regions only travel by water, none could show me the land route, though they pointed out with their fingers that part of the map where the said province was supposed to be. . . ." More troubles of the same kind followed the march: "I desired that Indian who had declared himself to be their lord to show me the road to Çagoatespan, a place on the river through which I had necessarily to pass if I was to follow the indications of the map. He answered that he knew not the way by land, but only by water, which was their sole mode of travelling. . . . I told him and his people to point out to me the spot where the village stood, which they did."

Again the expedition tried to march through swamp and jungle and was nearly

lost. "In this emergency, and seeing my people more dead than alive, I asked for a marine compass, which I was in the habit of carrying always with me, and which had often been of much use (though never so much as on that occasion), and recollecting the spot where the Indians had told me that the village stood, I found by calculation that, by marching in a north-eastern direction, we should come upon the village, or very near to it. I then ordered those who went forwards cutting the road, to take that compass, and to guide themselves by it, which they did. And thus it pleased our Lord that my calculations turned out so true, that about the hour of Vespers my men fell in with some idol houses in the centre of the village."

Here, then, we have a description of a map made by natives of southern Mexico which was so accurate that places could be plotted on it and compass bearings could be made and followed safely. The scale must have been more than approximately accurate. It is the last American Indian map we shall consider, because it is the best of which any record has been preserved, and because Cortés was able to do with it all that he could have done with a map made by the European cartographers of the period.

We have thus seen among the native peoples of America a sequence of maps which leads from the simplest of direction signs to a good and accurate plan of a large extent of country. As in so many other elements of culture, the Americans have preserved the beginnings of maps in what may be called a 'fossil' state. The simple hunting culture of the Newfoundland woodlands was contemporary with the early agricultural life of the Indians of the Mississippi, and with the copper-using civilizations of Mexico, which can only be compared with the earliest city states of Sumeria, 5000 years before them on the time scale. Our maps in Europe may or may not have had similar beginnings; we cannot prove anything, but the American maps displayed so much common-sense in their adaptation to local needs that we may think we were not very different in our own days of savagery. In any case, the later history of the map ran parallel in Europe and America; its story is well known and fully documented. When we go rambling on the week-ends of summer, though, we may use a route map from our Saturday evening paper that marks salient points of interest, and needs no accuracy of scale, which, in fact, is constructed on the same system as the pathetic little maps of Shanawdithit, last of the Beothuks.